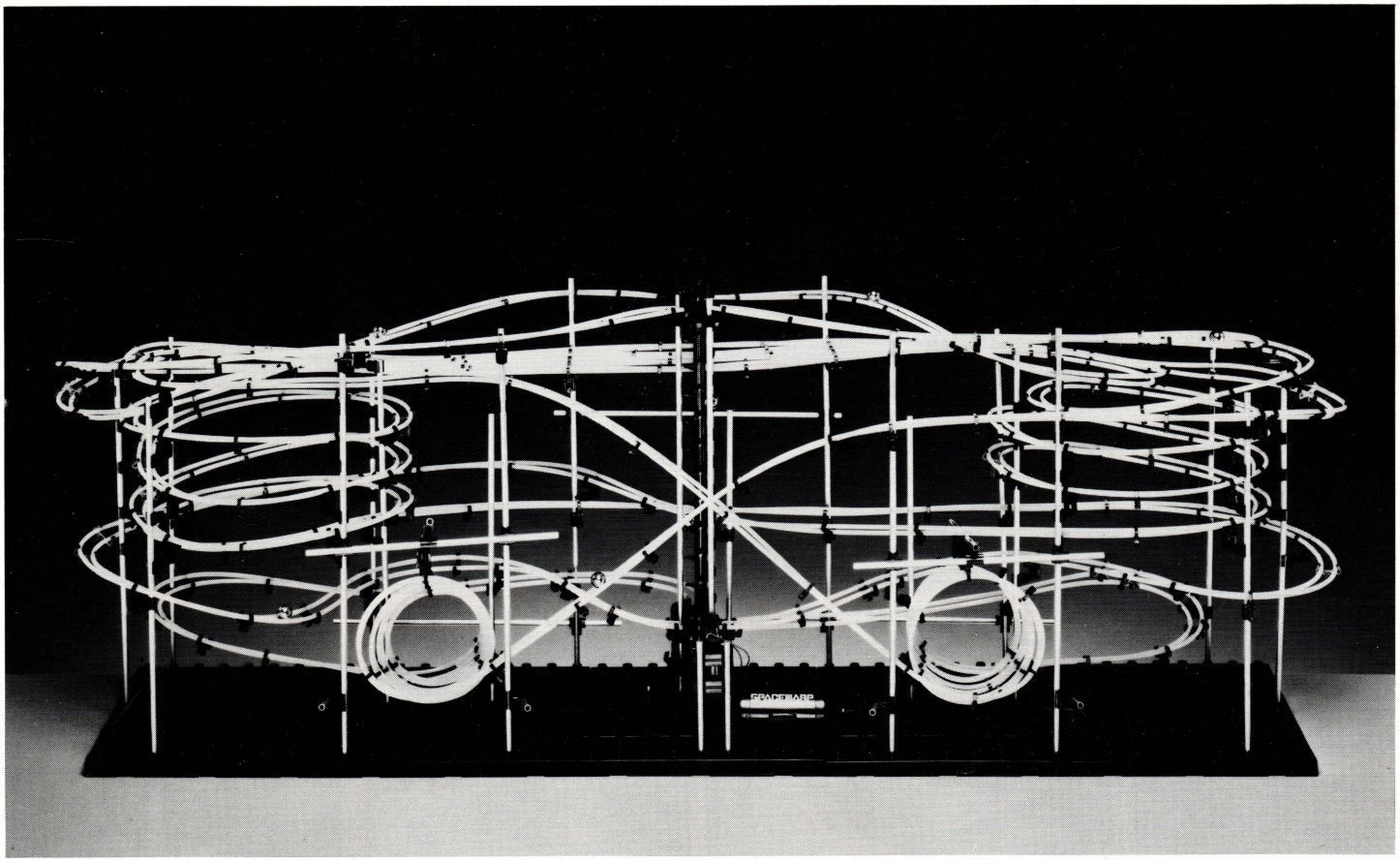
INSTRUCTION BOOKLET

SPACEWARP™

Fun! Challenging!
Exciting! Thrilling!
Create the largest scale roller coaster.

SET 40
Expert Coaster



For children under 12 years old, parental assistance in assembly of item may be required.

BANDAI

SPACEWARP SET 40

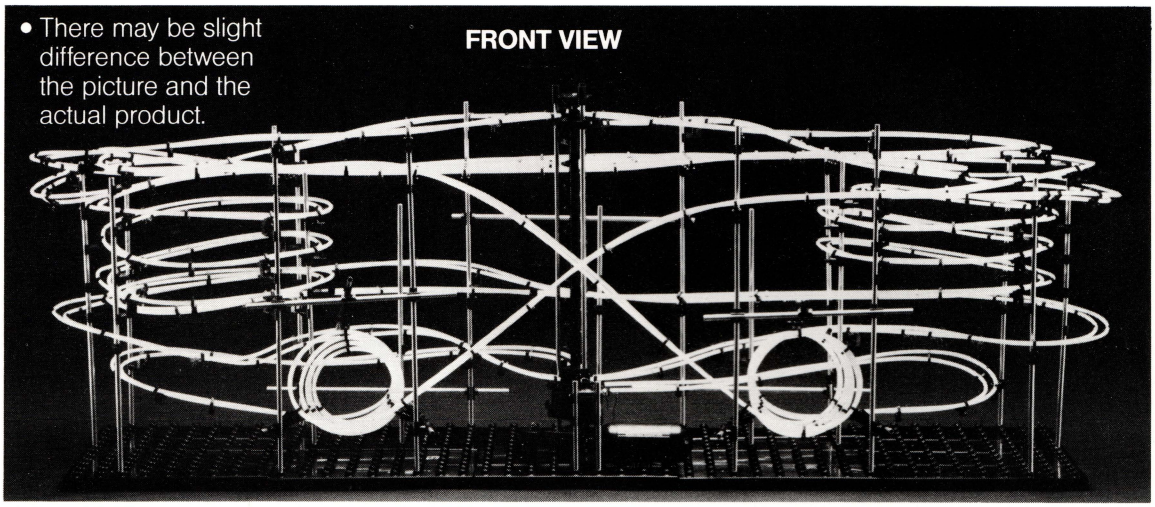
This set is the largest version of the SPACE-WARP series. It's an impressive set that enables you to enjoy large scale running, featuring four parallel tracks and multiple loops.

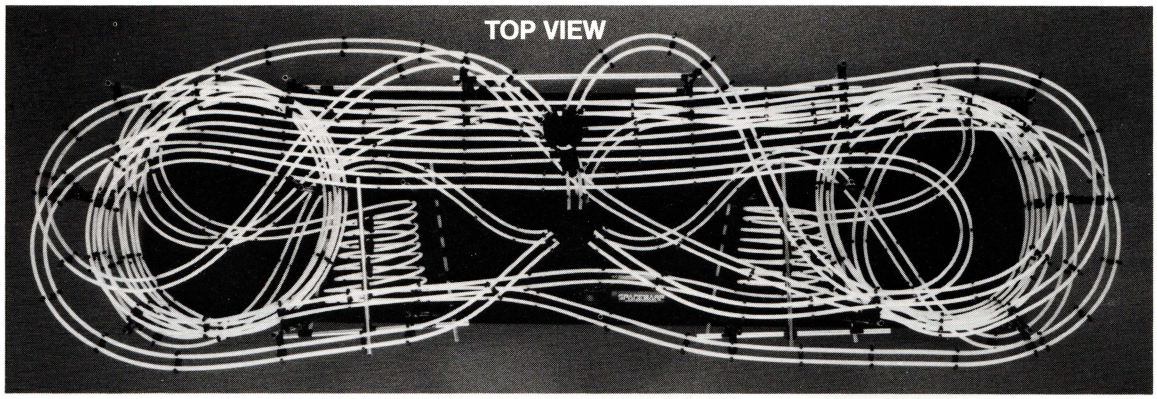
PRIOR TO ASSEMBLY

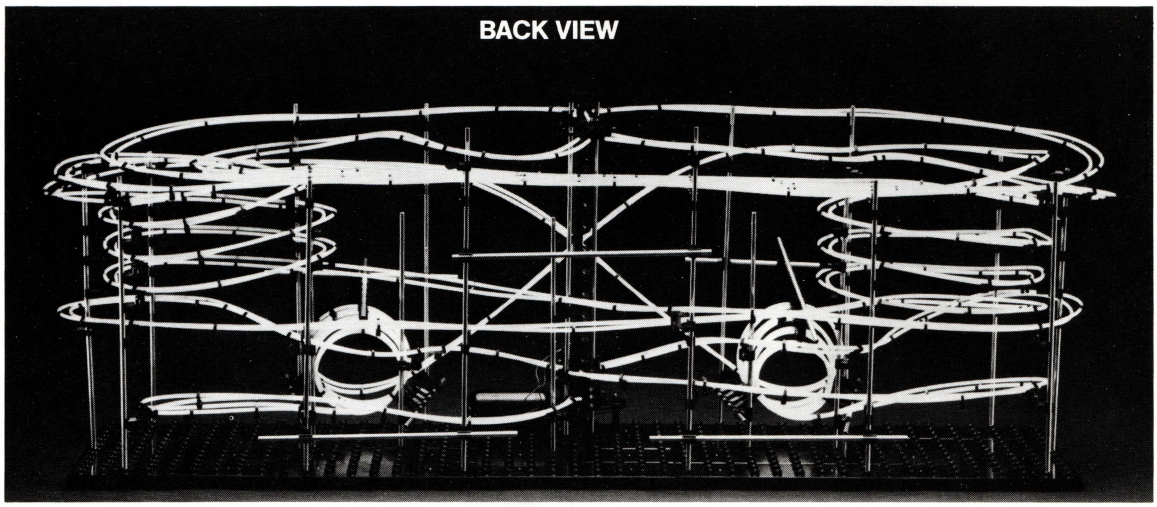
- Read the instructions carefully before assembling.
- The parts are shown on the back cover. Check that all the parts are included before assembling.
- Trim any extra plastic off components.
- The tools you might need for assembly are pliers, a Phillips screwdriver, needle nose pliers and mat knife.
- Cut out the parts list on the back cover and refer to it when assembling.

CONTENTS

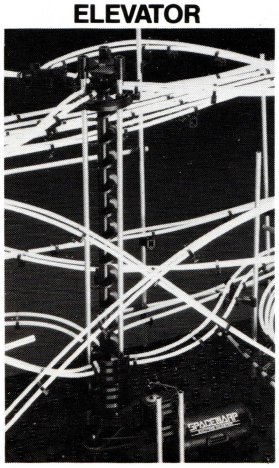
Picture of assembled spacewarp P2
How to assemble 1-11 . . . . . P3-P7
Basic layout plans P8-P10
Check list for correcting troubles . P11
Parts list P12



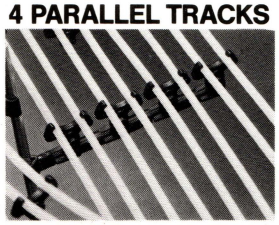




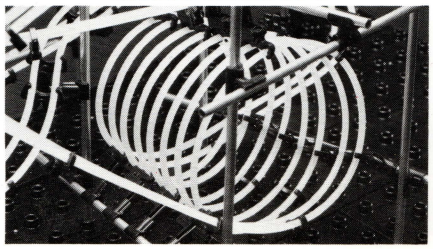
ELEVATOR



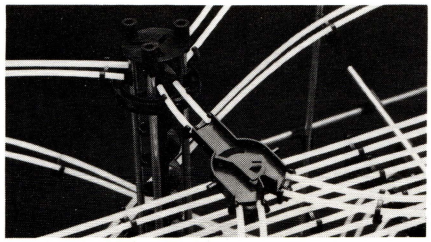
4 PARALLEL TRACKS



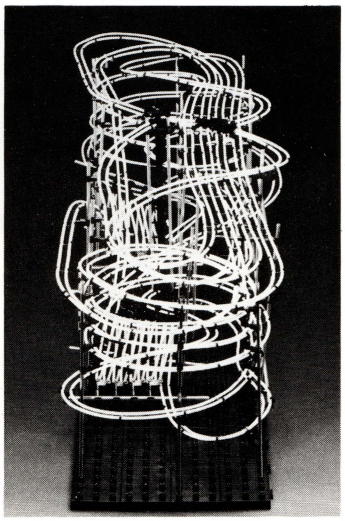
MULTIPLE LOOPS



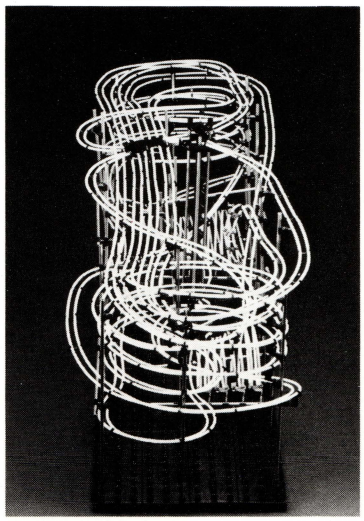
SWITCH UNIT



SIDE VIEW

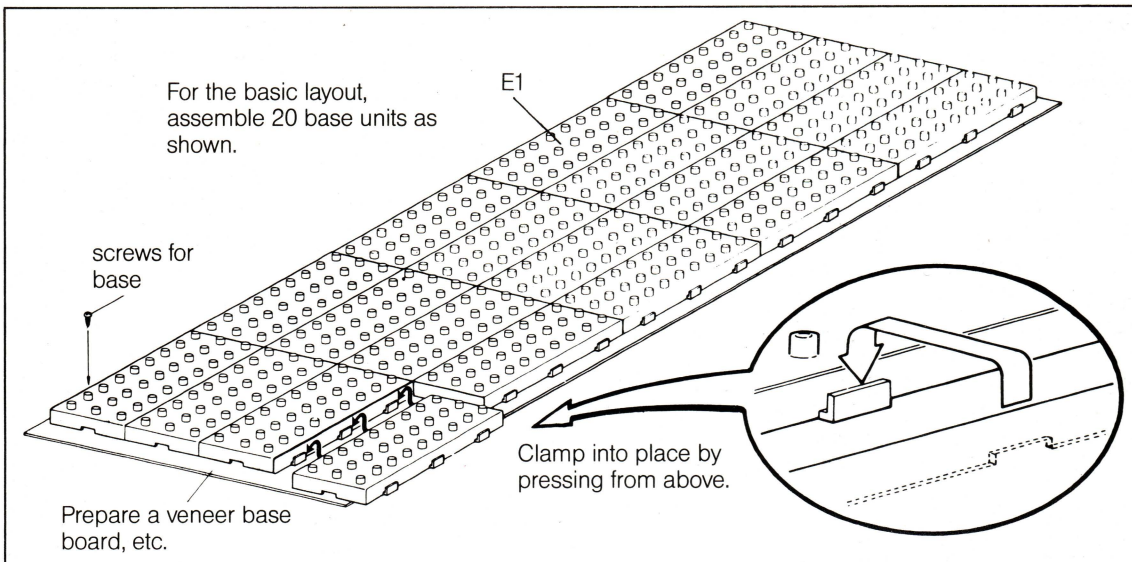


SIDE VIEW



1. BASE ASSEMBLY

First, decide on a basic layout, depending upon what kind of course you would like to create (a basic layout is shown.) Next, connect the base units using the connecting hooks. Make sure they are aligned properly; they will not connect if put together in the wrong direction. Next, attach base joints to the base, as shown in the picture.

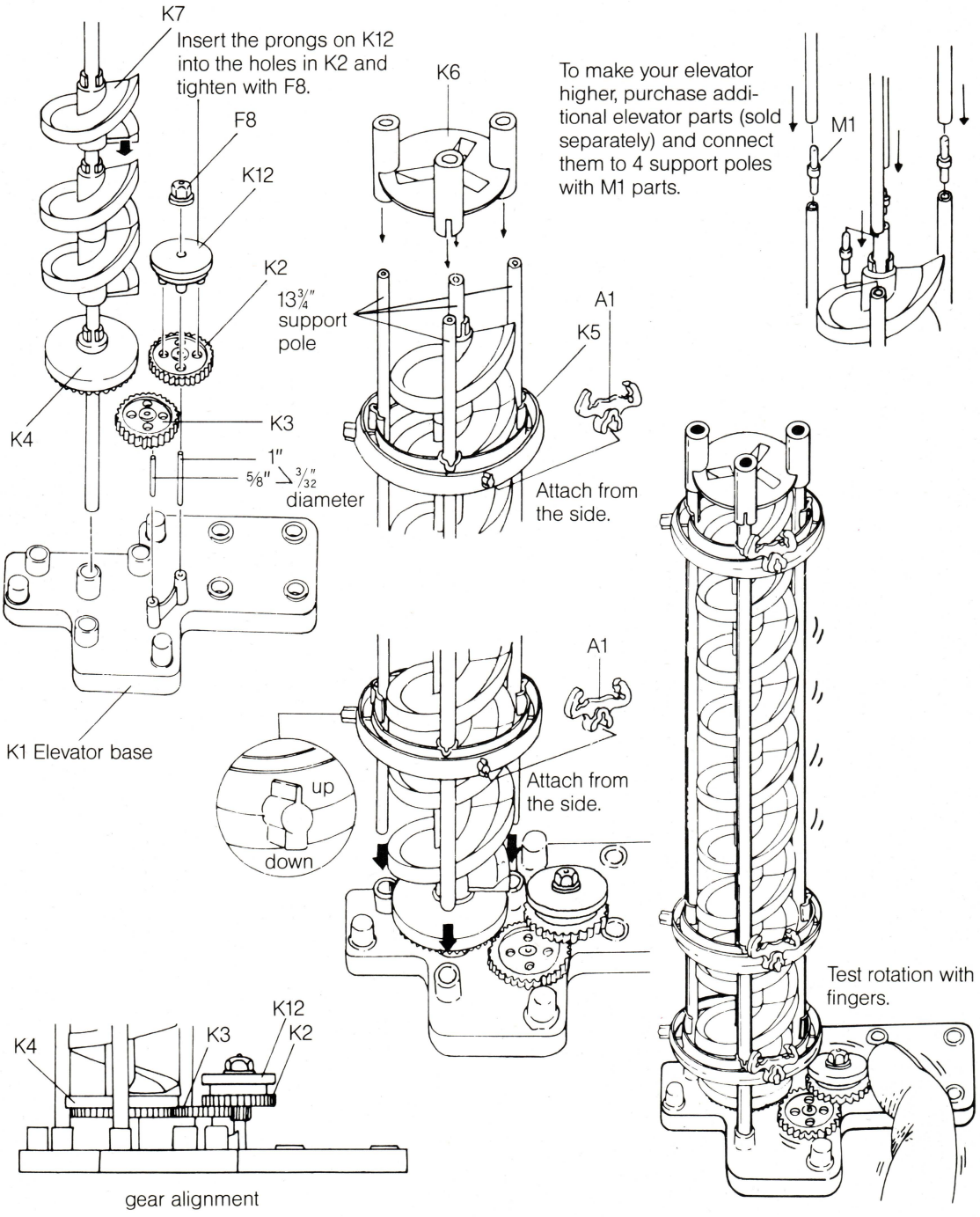

For the basic layout, assemble 20 base units as shown.
E1
screws for base
Clamp into place by pressing from above.
Prepare a veneer base board, etc.

2. ELEVATOR ASSEMBLY

Insert 5/8" and 1" gear shafts in the indicated positions, making sure each gear is complete. Insert a 13 3/4" long support pole. Slide a K4 on the pole and add K7s one on top of another. Be careful that K4 is right side up. The gears should match as shown in the picture. When you have finished stacking the K7s, insert 3 more support poles (13 3/4") to the indicated positions, fixing their positions with K5. Make sure you have K5 right side up. Put K6 on top, and the elevator is complete.

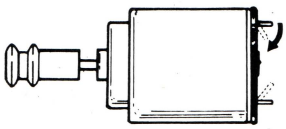
K5 will be the entrance or exit for your ball. Make sure it aligns with the rails by jiggling it up and down a little, if necessary. Fix A1 to the entrance.

When you are finished, test to see that the gears turn smoothly by moving them with your fingers. If you hear a strange sound or if it's too tight to rotate, first check to see that the elevator is not warped, then adjust the connection of the gears.

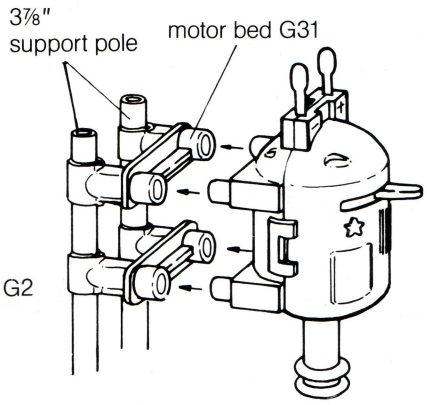


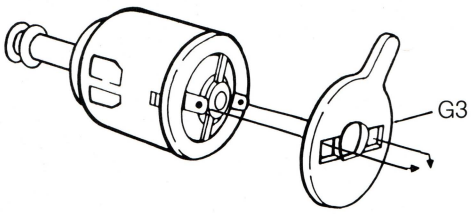
3. MOTOR ASSEMBLY

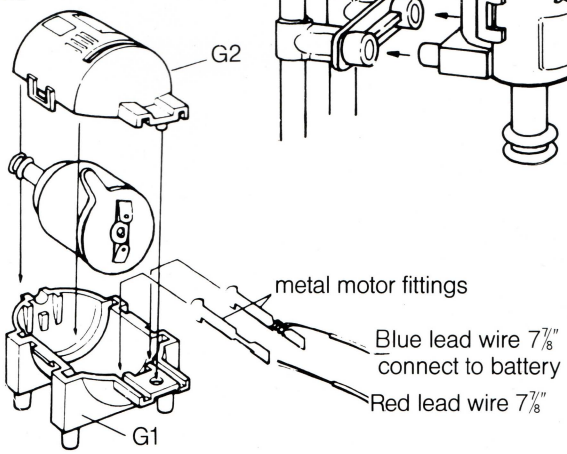
Connect G3 to the motor as shown, and bend the prongs of the motor slightly inward. Make sure you match the shape of the tip on the back of the motor with the hole of G3. If not matched properly, they will not work well. Place the motor with wires and connectors attached on G1. Cover them with G2. The lead wire should be fastened to the metal fittings tightly. Hook the motor bed to the two support poles and connect the motor to it.

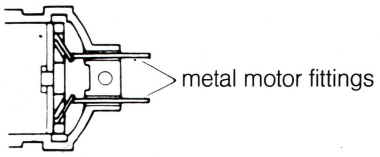


Bend inward. When you turn the switch, the motor prongs will rotate to contact the motor fittings to power the drive system.



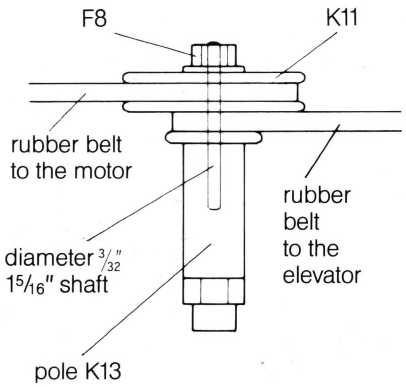




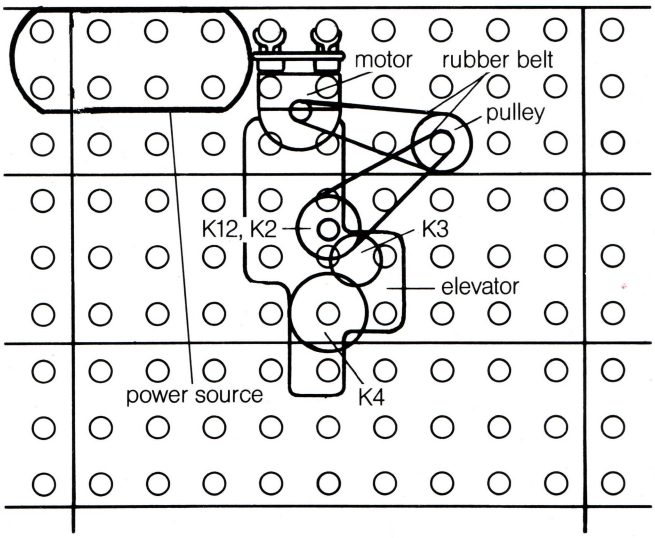


4. ATTACHING THE ELEVATOR AND THE MOTOR

Attach pulley K11 to the plastic support as shown. Attach rubber belt as shown. Then attach them to the base where indicated. Connect the lead wire from the motor to the battery directly and check that it runs properly.

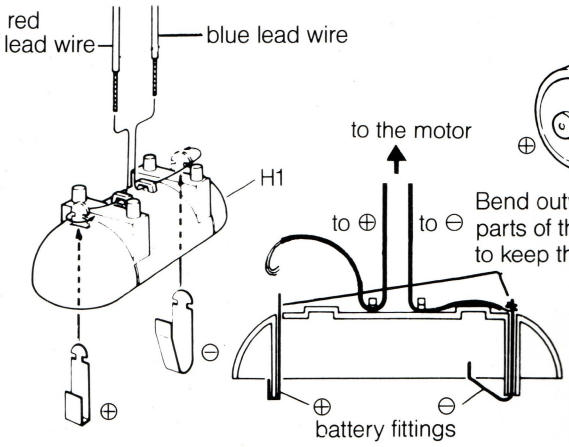


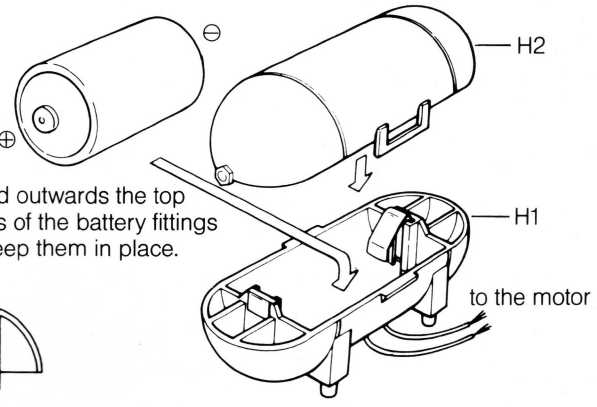
Positioning of drive system



5. POWER UNIT ASSEMBLY

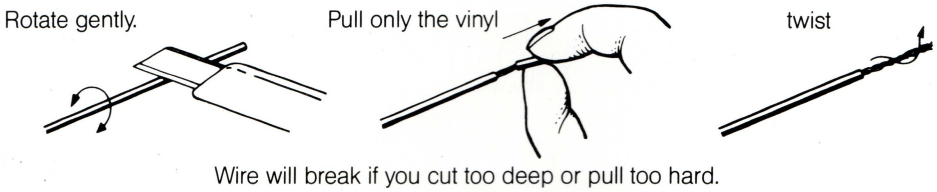
Attach metal battery fittings ⊕ ⊖ and the lead wires to H1. Insert one (1) 'D' battery (sold separately) and cover it with H2. Avoid mixing up ⊕ ⊖.





Bend outwards the top parts of the battery fittings to keep them in place.

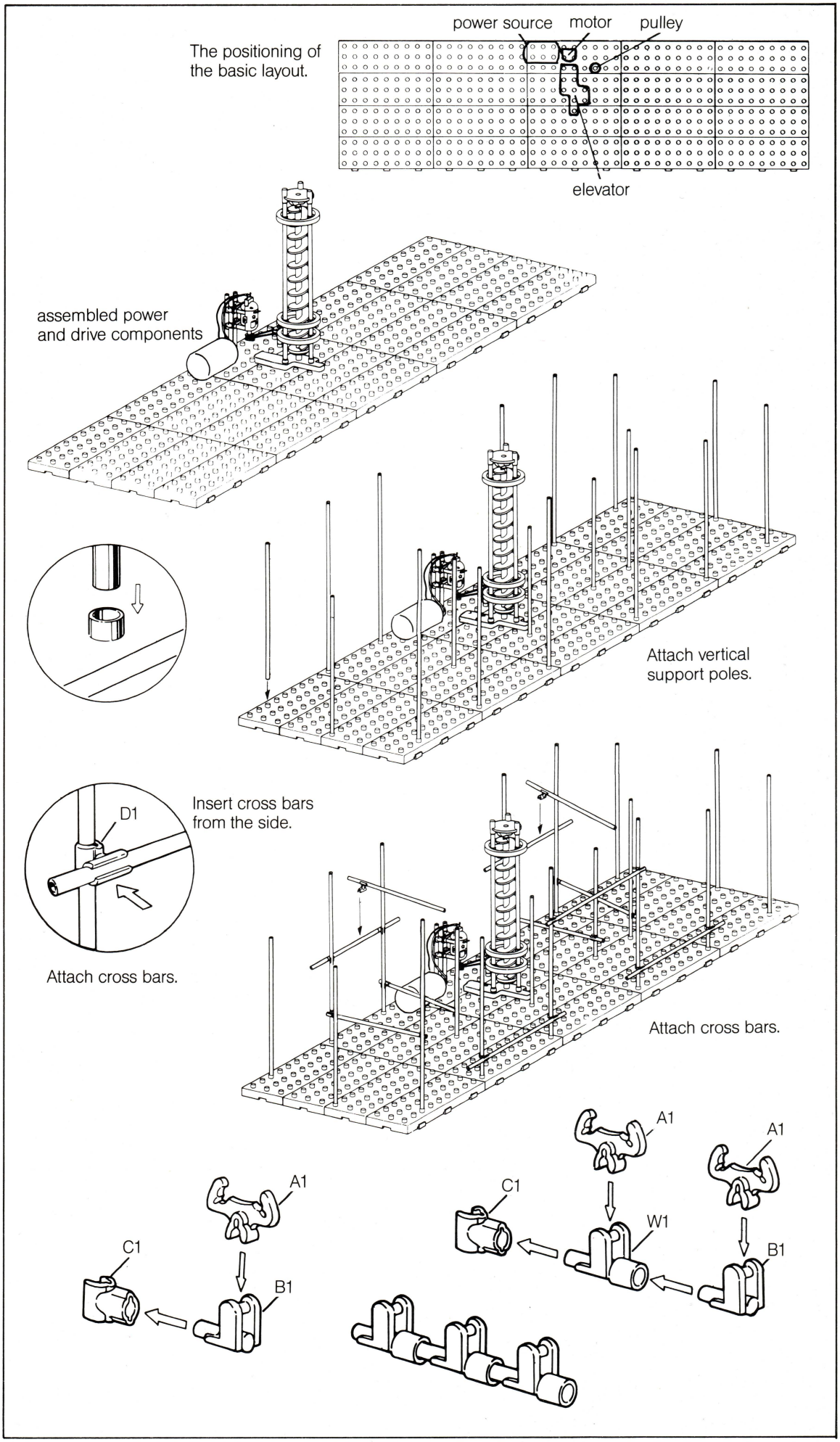
PLEASE NOTE: To expose the electric wire in the lead line, trim the vinyl cover by carefully cutting it with a knife, and pull it gently.



Wire will break if you cut too deep or pull too hard.

6. HOW TO ATTACH THE POWER AND DRIVE COMPONENTS TO THE BASE

Attach as shown in the drawing on the right. (For the basic layout.)



7. HOW TO ASSEMBLE SUPPORT POLES

Insert support poles into the base referring to the picture on page 2 or the ground plan on page 8. After inserting the vertical support poles, attach cross bars where reinforcement between long poles is necessary or where the layout requires doing so. Insert the cross bars from the side as shown.

8. HOW TO ASSEMBLE RAIL ARMS

Assemble the arms that support the rails as shown. In our Set 40, assemble four W1 pieces to make 4 parallel tracks. Connect the W1 pieces as shown.

9. HOW TO ATTACH RAILS

Attach rails from below. There is a choice between two courses in the basic layout.

- Attach rail arms on each part, referring to the completed picture of the basic layout.

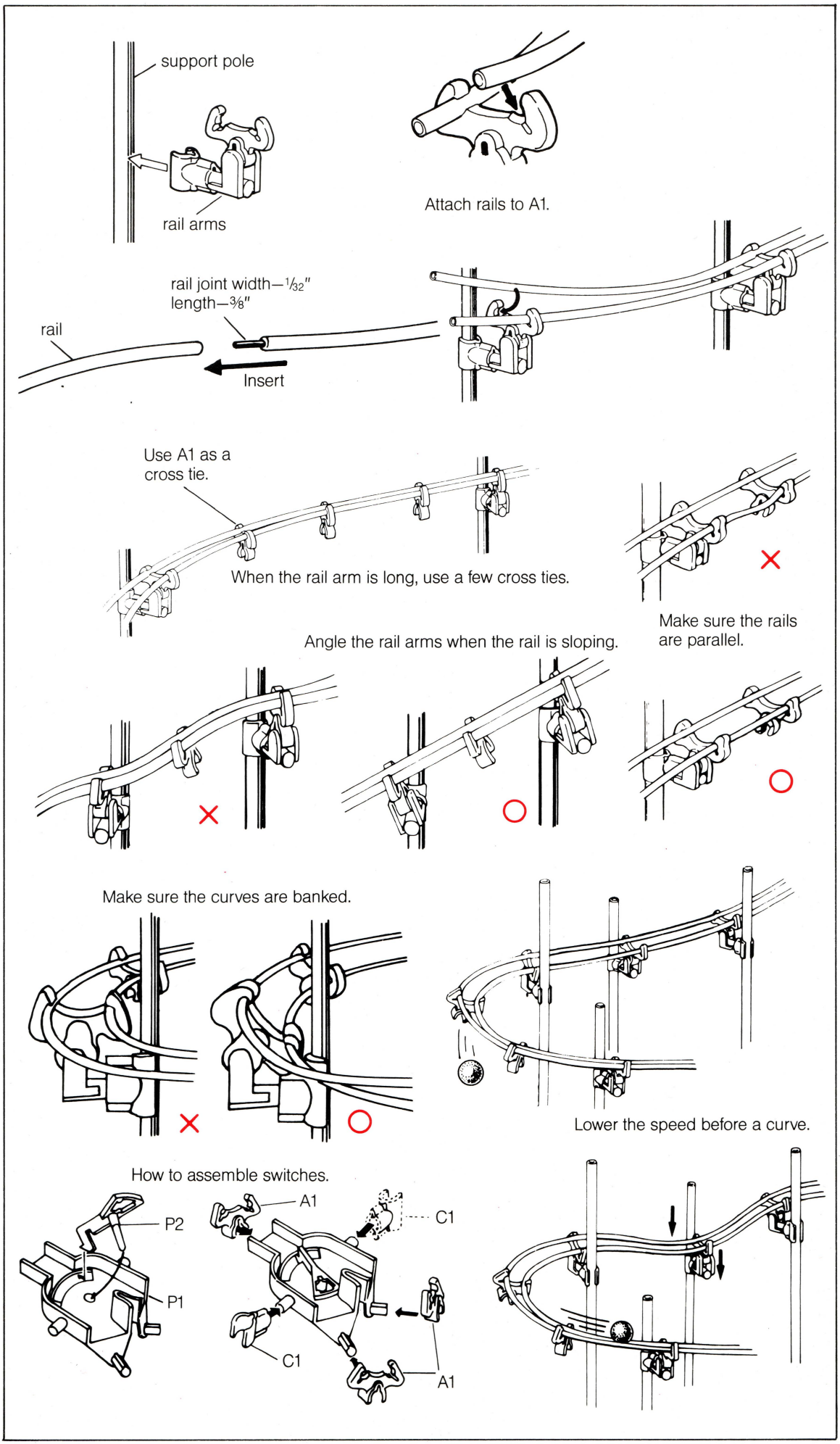
To connect rails, use rail joints (3/8" shafts). Insert them into the holes in the center of the rails. Trim the end of rails neatly so the joint is smooth.

When the parts are all assembled, test with a ball and adjust accordingly.

How to assemble switches.

Insert P2, making sure the claw fits into the slot. Be careful not to break the claw. Attach part A1 to the entrances and exits as shown. Then, use C1 to attach the switch to the support pole.

If the ball derails, bank the curve. If derailing still occurs, the speed of the ball is too high. Slow the ball down before it enters a curve as shown in the drawing.

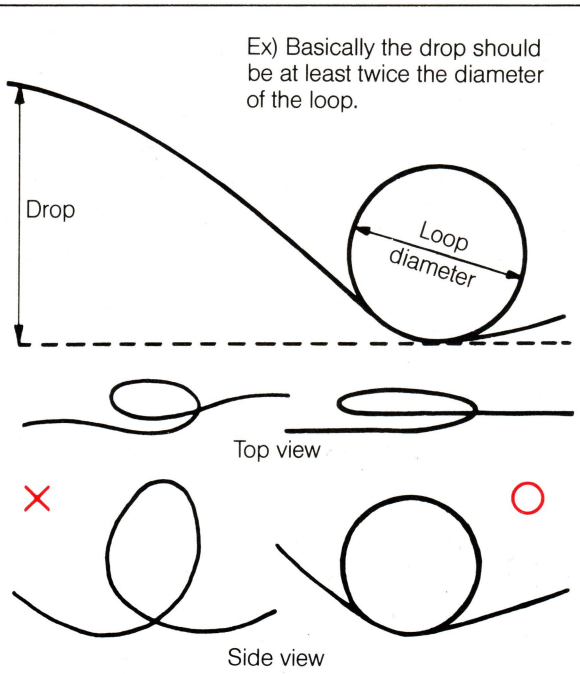


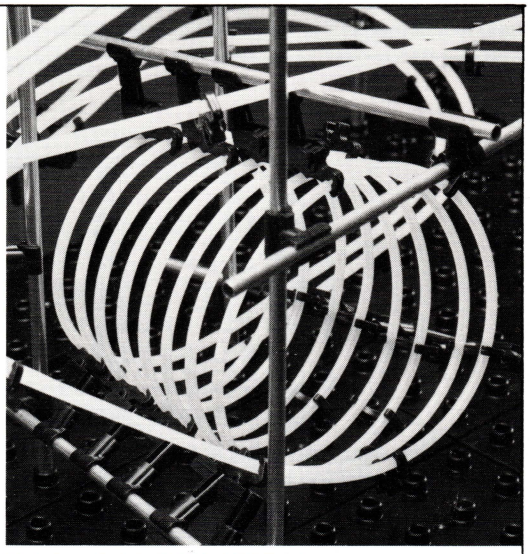
O = CORRECT WAY
X = INCORRECT WAY

10. HOW TO MAKE A DOUBLE LOOP

To make a loop work well takes careful adjustments. Experiment running a ball to make sure it has enough speed to go around the loop.

Make sure each part is set properly. For example, check to see that rail arms, cross ties (A1), support poles and rails are set properly. Check that rails are not off the cross ties, and check to see that rail arms are not off the support poles.





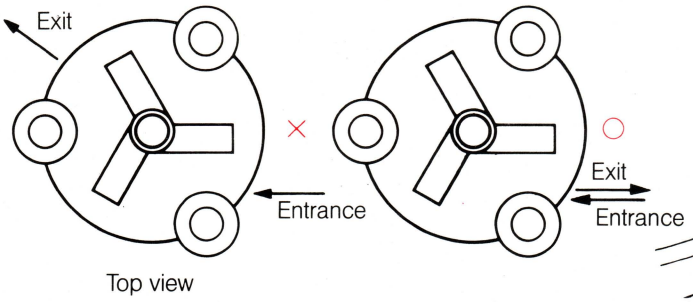
MULTIPLE LOOPS IN SET 40
When creating multiple loops, make sure the ball has enough momentum by allowing enough vertical drop, and by decreasing the diameter of each succeeding loop.

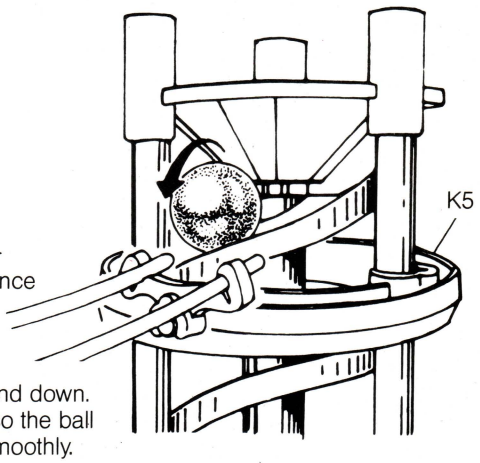
11. ELEVATOR ENTRANCES AND EXITS

Elevator entrances and exits should be both on the same side. This reassures continuous driving.

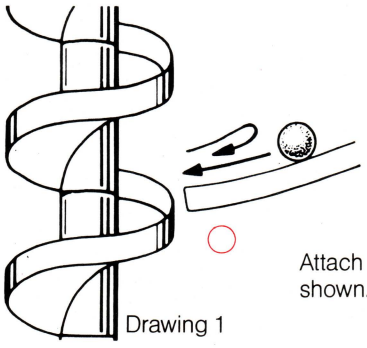
The elevator entrance should be located on an upper level, allowing the ball to roll easily down a long path as shown in Drawing 1.

If the ball is moving too fast, it may bounce or fall off. Drawing 2 shows a case where the ball bounces back, loses its speed, and stops on the rail.

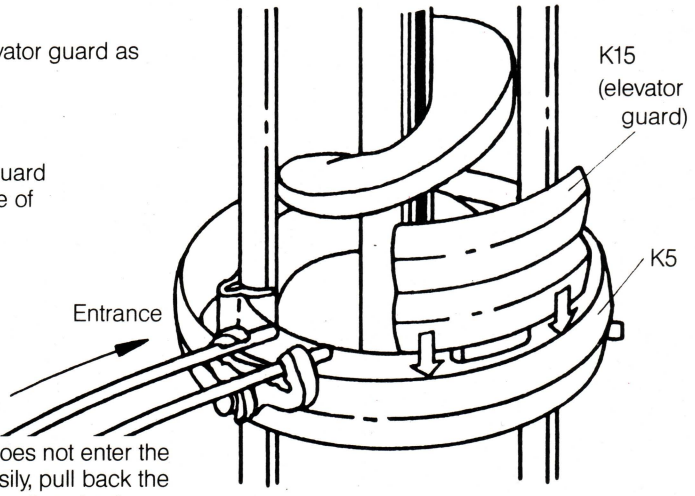




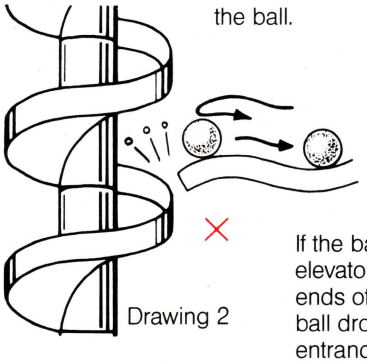
Adjust K5 up and down. Adjust the rail so the ball will ride on it smoothly.



Attach elevator guard as shown.



Insert an elevator guard next to the entrance of the ball.



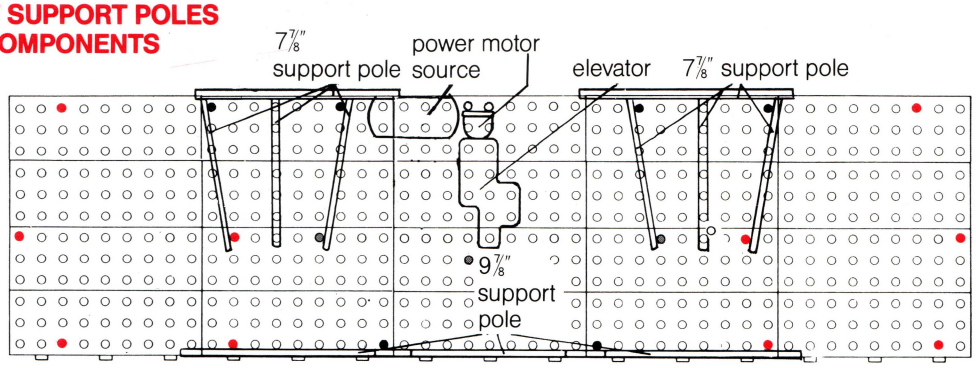
If the ball does not enter the elevator easily, pull back the ends of the rails to let the ball drop into the elevator entrance.

O = CORRECT WAY
X = INCORRECT WAY

MASTER THE BASIC LAYOUT FIRST BEFORE YOU CREATE YOUR OWN ORIGINAL COURSES.

SPACEWARP allows you to create your own course layout. But it will help to first master the basics of course creation with the basic layout here. Then you can expand your enjoyment of SPACEWARP with partial changes of the basic layout to totally creating your own layouts.

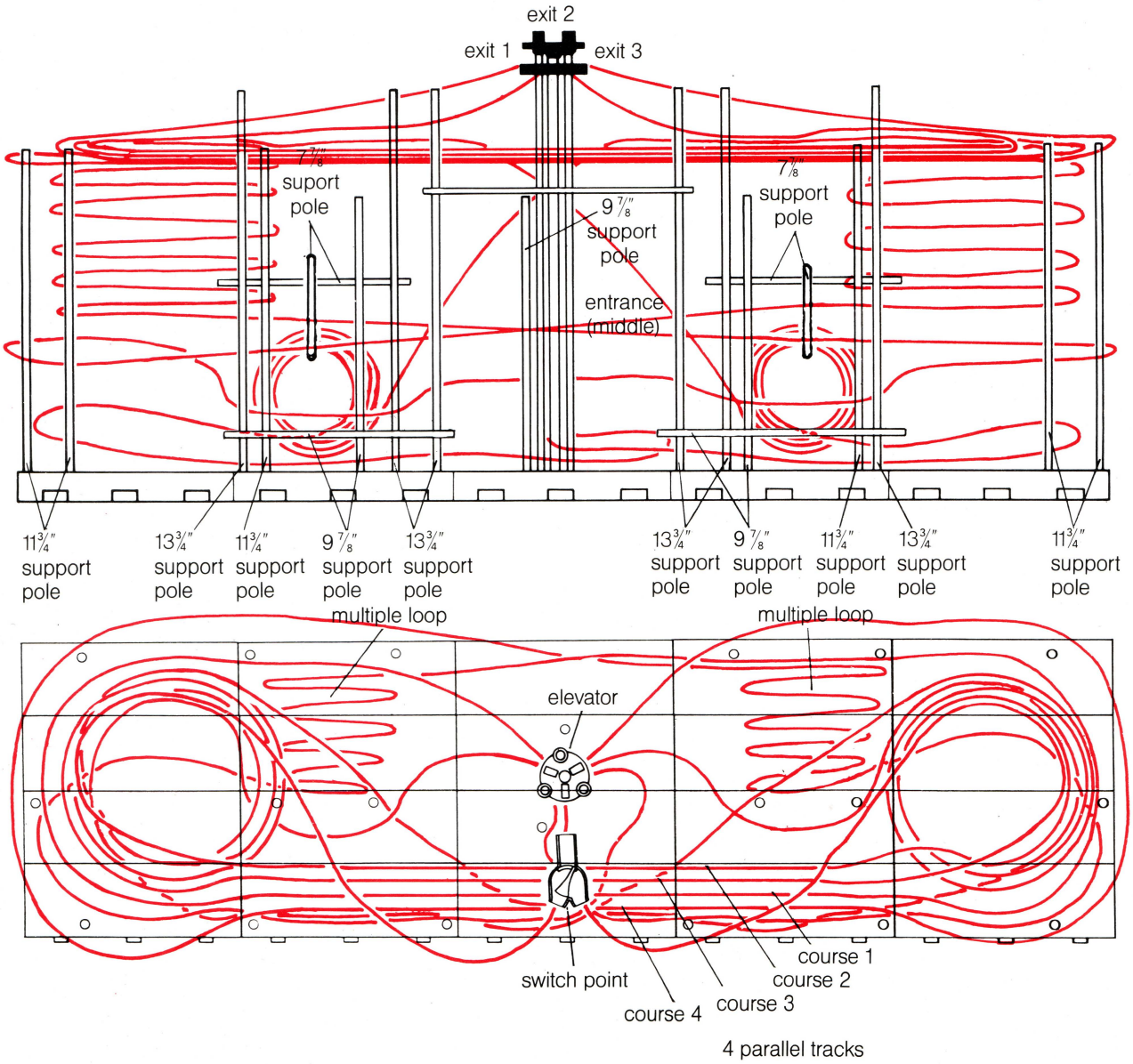
POSITIONS OF SUPPORT POLES AND POWER COMPONENTS



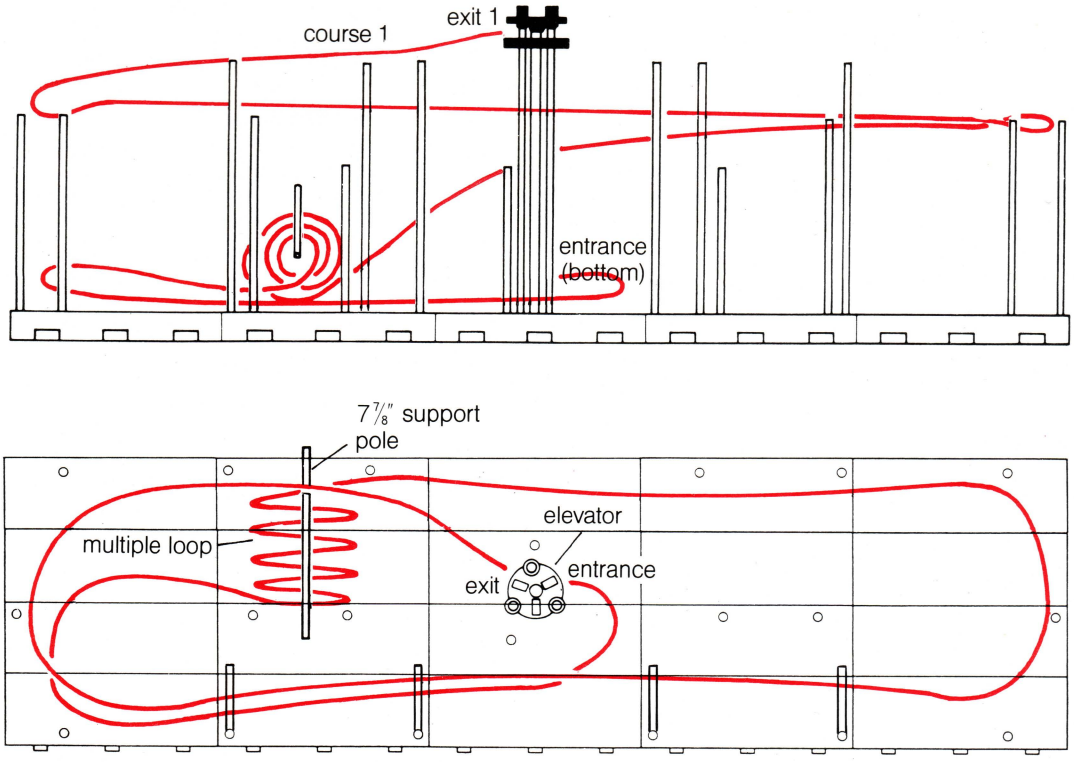
- Stand support poles at the places indicated with •. Attach cross bars referring to the package or the picture on page 2. Attach the elevator, the power source and the motor, as shown.

There are 4 courses in the basic layout. (There are 4 entrances but only 3 elevator exits due to the use of switches.) Assemble, paying careful attention to the picture.

THE WHOLE LAYOUT

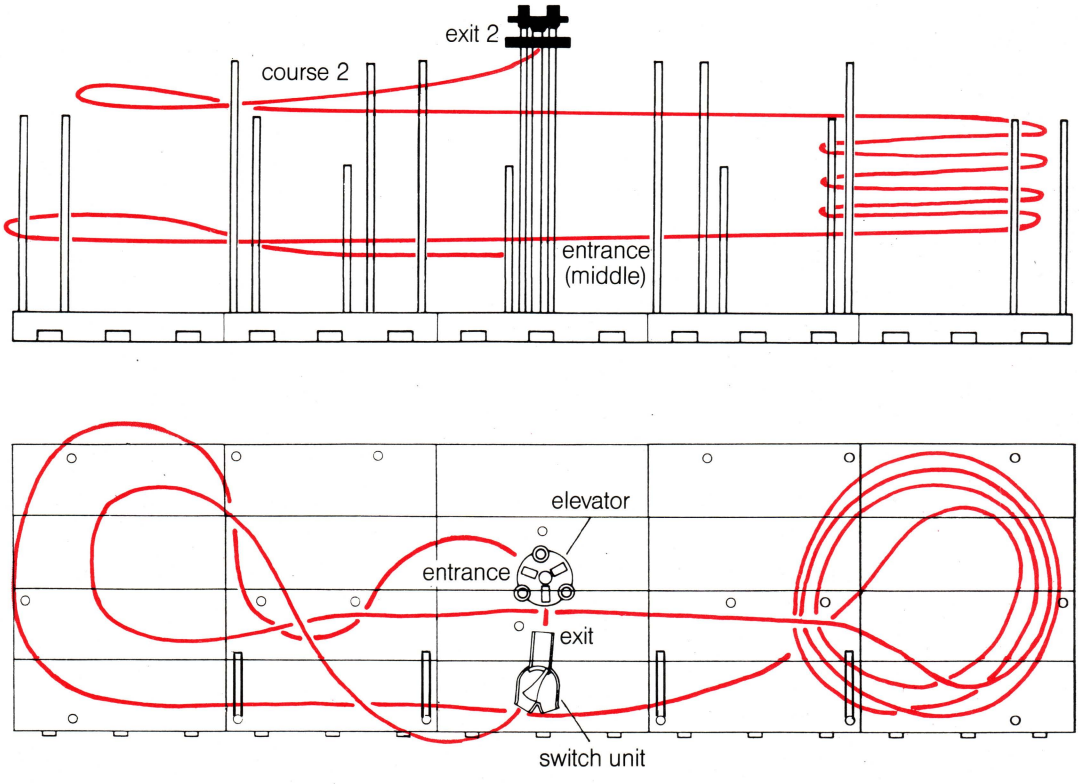


LAYOUT ①



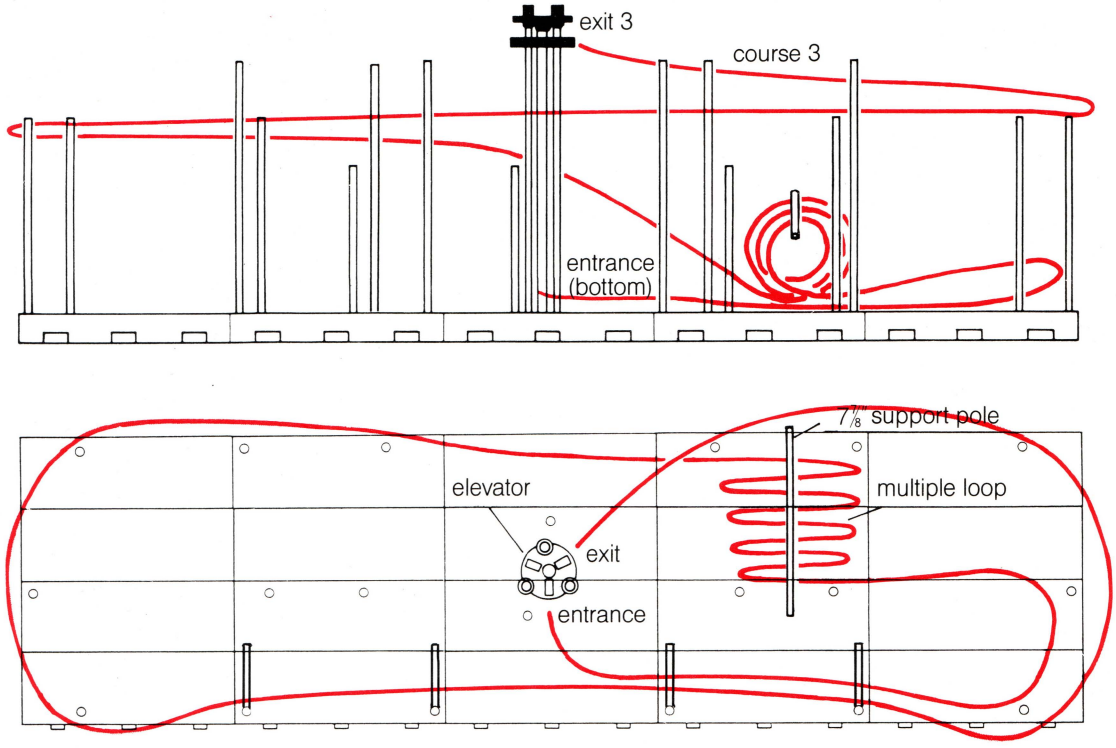
① Cut a pair of rails to a length of 173" and attach them as shown to run from the exit and to the entrance.

LAYOUT ②



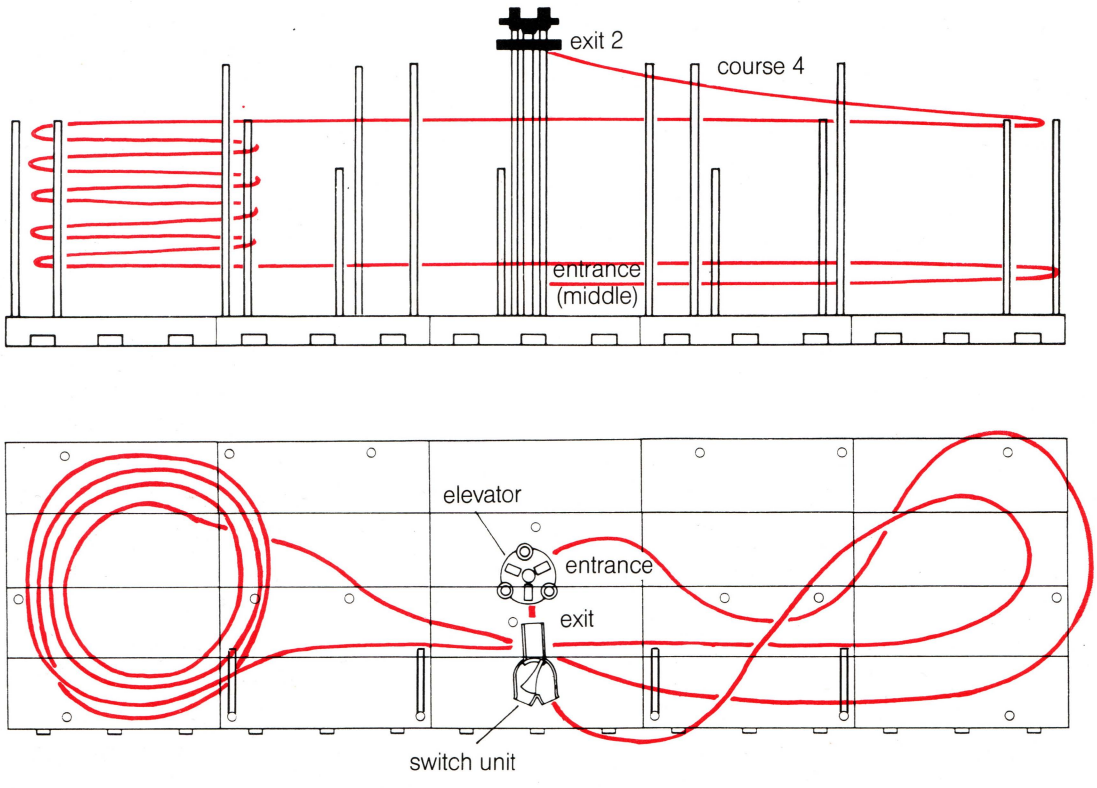
② Attach a pair of rails that are each ¾" long to connect the exit to the switching unit, and a pair of rails each 222 3/4" long to run from the switching point to the entrance.

LAYOUT ③



③ Attach a pair of rails each cut to 183 1/8" in length to run from the exit to the elevator entrance.

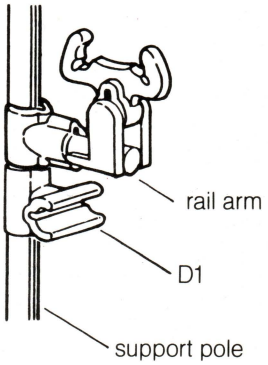
LAYOUT ④



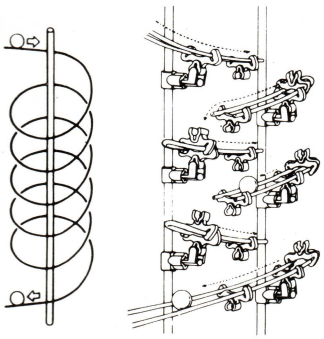
④ Attach a pair of rails each cut to 249" in length to run from the switching point to the elevator entrance.

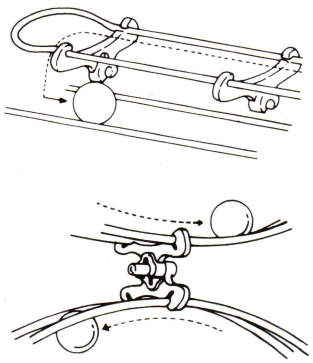
CHECK POINT
When the whole set is assembled, turn the motor on, and try running the balls. Sometimes, balls may run right next to each other. When 2 or 3 balls run right after each other, the rails may sag due to the weight of the balls. In this case, reinforce the rails using rail clamps or support poles. If the rail arms don't exactly match, put D1 or C1 underneath the rail arms. You may also refer to Check Point 1, Instructions for Attaching Rails on Page 6, or Entrance/Exit explanation of the elevators on Page 7, and enjoy smooth and continuous rides.

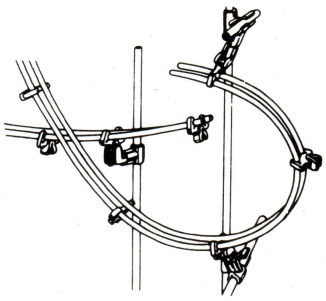
- After enjoying the basic layouts, feel free to accept the challenge of creating your own original layouts.
- This product allows you to assemble bigger layouts with additional parts. Your ingenuity will enable you to expand the layout to its fullest extent.
- Dust or lint can slow down the movement of balls. Occasional wiping with a silicone cloth is recommended.
- It is dangerous to lean on, or to apply weight to, the completed set.



Examples of schemes



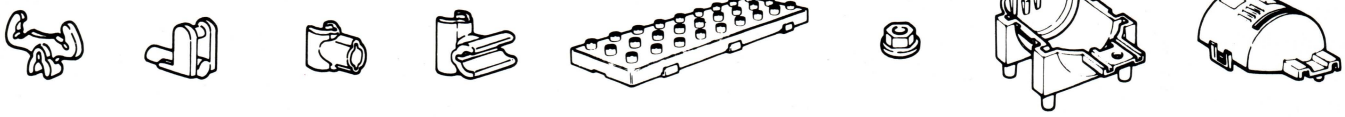




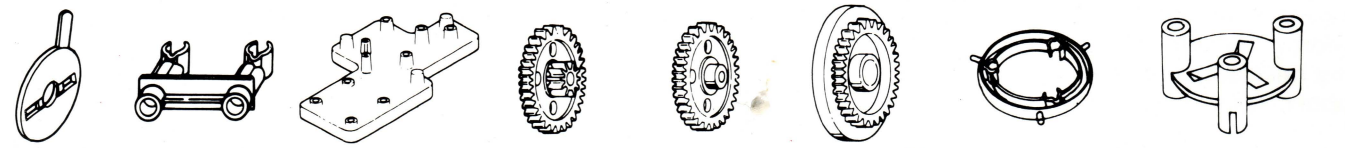
TROUBLE SHOOTING

Problems		Possible reasons
Doesn't move.	The gears don't turn.	The switch is off. The batteries are worn out. The batteries are not placed properly. A wire is loose or improperly wired. Some obstacle is blocking the gears.
	The gears turn.	The gears aren't hooked up closely enough to mesh. The gears are not properly assembled.
It moves sporadically.		The wiring is loose, the battery is weak. The gears are not meshed properly. The gears are not assembled correctly.
The ball falls off the elevator. The ball doesn't climb up the elevator.		The elevator is not perfectly vertical, not aligned properly. The support pole of the elevator is tilted. A wire is loose, the battery is weak.
The ball falls off the course.		See P 6 and 7.
The ball doesn't come out of the elevator.		See P 7.
The ball stops in the middle of the course.		The drop is negative or too little.
It makes a strange noise. It rattles. It makes a rubbing noise.		Loose assembly. The gears are not meshed properly. Something is stuck in the gears.
The ball doesn't make the curve properly.		Adjust the double loop (See P 7). Sometimes it's due to the lack of turning speed. Slide the curve unit up or down on the support pole.
The ball doesn't fit into the curve unit.		Align the Part A1 properly with the hole.

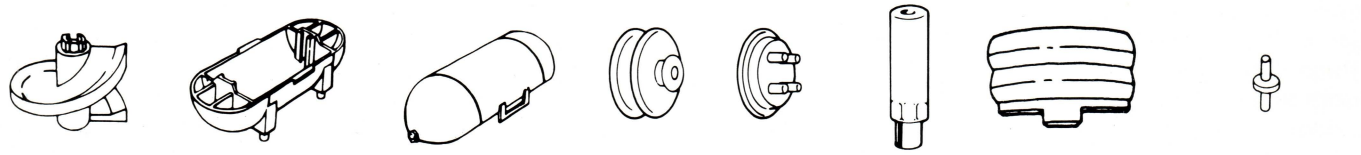
PARTS LIST



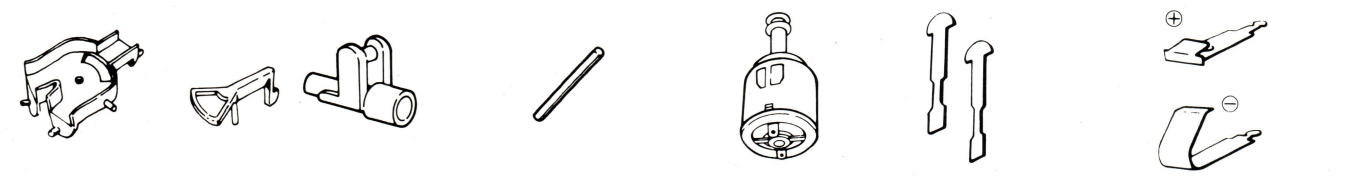
A1	B1	C1	D1	E1	F8	G1	G2
Cross tie	L joint	Joint 1	Joint 2	Base unit	Gear nut	Motor box (bottom)	Motor box (cover)
432 pcs.	144 pcs.	144 pcs.	72 pcs.	20 pcs.	2 pcs.	1 piece	1 piece



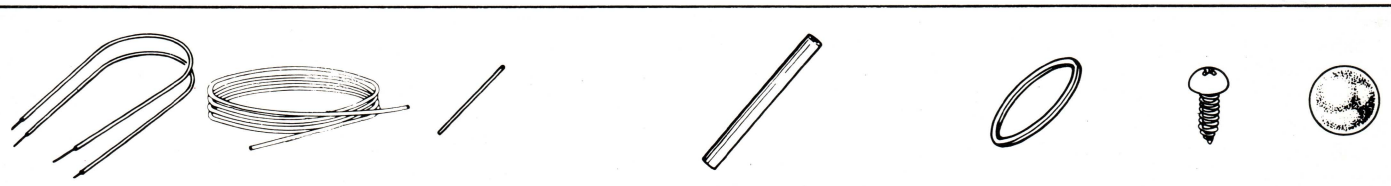
G3	G31	K1	K2	K3	K4	K5	K6
Switch board	Motor bed	Elevator base	Elevator gear	Elevator gear	Elevator gear	Elevator parts	Elevator parts
1 piece	2 pcs.	1 piece	1 piece	1 piece	1 piece	3 pcs.	1 piece



K7	H1	H2	K11	K12	K13	K15	M1
Elevator parts	Battery box (bottom)	Battery box (cover)	Pulley #1	Pulley #2	Pulley mount	Elevator guard	Pipe connecting parts
14 pcs.	1 piece	1 piece	1 piece	1 piece	1 piece	2 pcs.	4 pcs.



P1	P2	W1	Shafts $\frac{3}{32}$" Diam			Motor	Metal motor fittings	Battery fittings for ⊕ and ⊖
Switch unit	Switch part	W joint	$\frac{5}{8}$" long	1" long	$\frac{15}{16}$" long	1 piece	2 pcs.	1 each
1 piece	1 piece	20 pcs.	1 piece	1 piece	1 piece			



Lead wire	Rail	Rail joint	Support poles					Rubber belt	Screws for base	Balls
blue, red $7\frac{7}{8}$"	141 feet	$\frac{1}{32}$" Diam., $\frac{3}{8}$" long	$13\frac{3}{4}$"	$11\frac{3}{4}$"	$9\frac{7}{8}$"	$7\frac{7}{8}$"	$3\frac{7}{8}$"	2 pcs.	6 pcs.	5 pcs.
1 each		10 pcs.	10 pcs.	10 pcs.	7 pcs.	8 pcs.	2 pcs.			

© 1986 Bandai America, Inc.
4 Pearl Court
Allendale, NJ 07401

Made in Japan
Printed in Japan